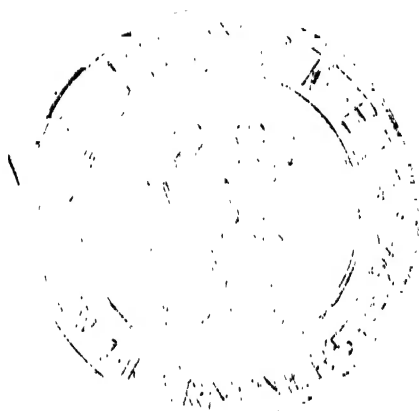


J. A. HENCKELS TWIN WORKS SOLINGEN



OF THE WORKS, THE PRODUCT,
AND ITS SYMBOL, THESE PAGES
DO BEAR WITNESS AND DO
SHOW HOW THESE THREE MELT
INTO ONE MIGHTY UNIT TO
CARRY THEIR FAME THROUGH
THE WORLD.

DEDICATED
TO THE GUESTS AND FRIENDS
OF THE TWIN WORKS

PRINTED IN GERMANY

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REPRINT PERMITTED ONLY BY SPECIAL CONSENT
OF J. A. HENCKELS TWIN WORKS, SOLINGEN

A long road lies ahead for the shapeless bit of steel that aims to be a gleaming knife or a slender pair of scissors. It must tread a maze of paths before it may, as a full fledged piece of cutlery, begin its journey through the world. Great diligence, perfect organization, and methods proved through centuries of experience, confirmed and developed by science, must lead it through each of the processes of manufacture. The routine is interrupted only by frequent tests to determine whether it is suited to its purpose, keen cutting, and of impeccable quality.

It is fitting and of special significance that a contemplation of the Twin works begin with the concept "Quality". In the well lighted work rooms of these factories, in their spacious grinding shops and thundering forges, all things, men and machines, the will to work and its resulting accomplishments, all are pressed into the service of quality.

The Twin works is, with respect to steel, the only factory of its kind in the world, that is self-sufficient; for a great Twin works steel plant supplies the raw material. The advantages of this are evident: the composition of this raw material can easily be adapted to the experience gathered by the consumer of the finished product; special requirements can be met; research workers in the Twin works laboratories build upon the results of extensive steel tests and further develop them. And so any possible hindrance that might be occasioned by drawing upon an alien source of raw material is eliminated, efficiency is increased, and the conception of quality is fostered from its logical beginning, the fundamental making of the steel. It was Johann Abraham Henckels who, in the year 1869, had the creative acumen to complete the cycle of production



BIRD'S EYE VIEW OF THE TWIN WORKS SOLINGEN

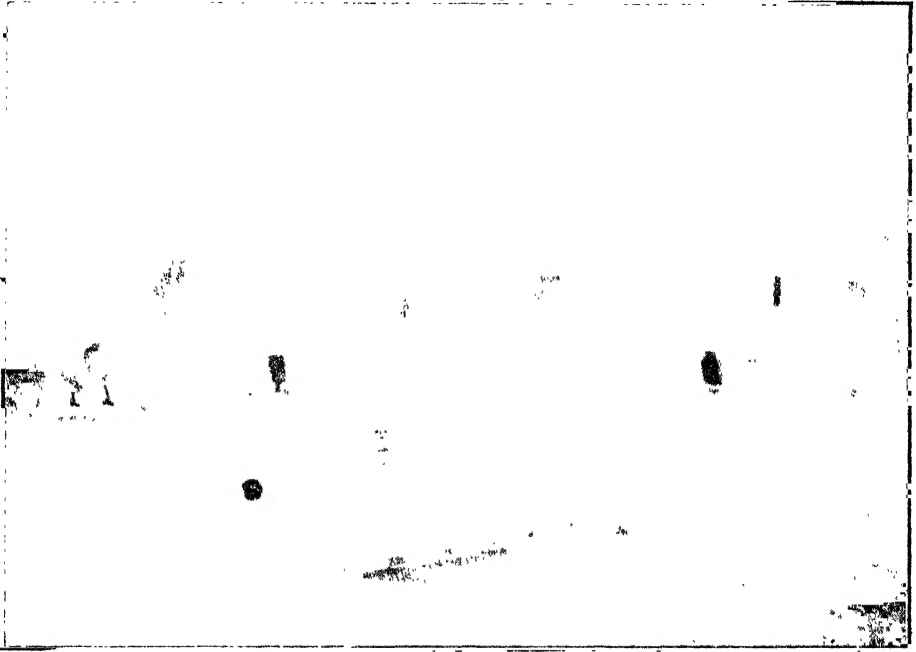
by founding the Twin works steel plant. In this present day era of the vertical system in industrial organization such cyclic production is a worth while aim, but in 1869 the action showed rare courage and surpassing vision.

NAWAB SALAR JUNG BAHADUR

From Sweden, the land of pure ores and of charcoal, comes iron in bars, and is first of all subjected to the traditional cementing process. Because of its high cost this process is used only when the very highest quality must be attained. The iron bars and charcoal sufficient to supply the necessary carbon content, are together placed in enormous hermetically sealed furnaces at a temperature of 1100 to 1200 degrees centigrade (over 2000 fahrenheit). This intensive heating process continues for from eighteen to nineteen days and then the steel, having cooled slowly, finds its way in small pieces to the smeltery.

This spacious work hall is filled with the fiery glow of fanglike flames that rise as if by magic from the earth. The crucibles gradually attain white heat and at 1450 degrees centigrade (over 2600 fahrenheit) the melting process takes place within them. The carbon content of each batch of steel is gauged according to the use for which it is destined. For some purposes alloys are added. Stainless steel, for instance, requires a certain percentage of chromium. Even during the smelting process care is taken to provide that which makes for a keen cutting edge. Again and again the consumer's experience is used as a guide in the effort to produce a specific kind of steel for a specific finished product.

The firing system in the smeltery is provided by the Twin works gas plant.



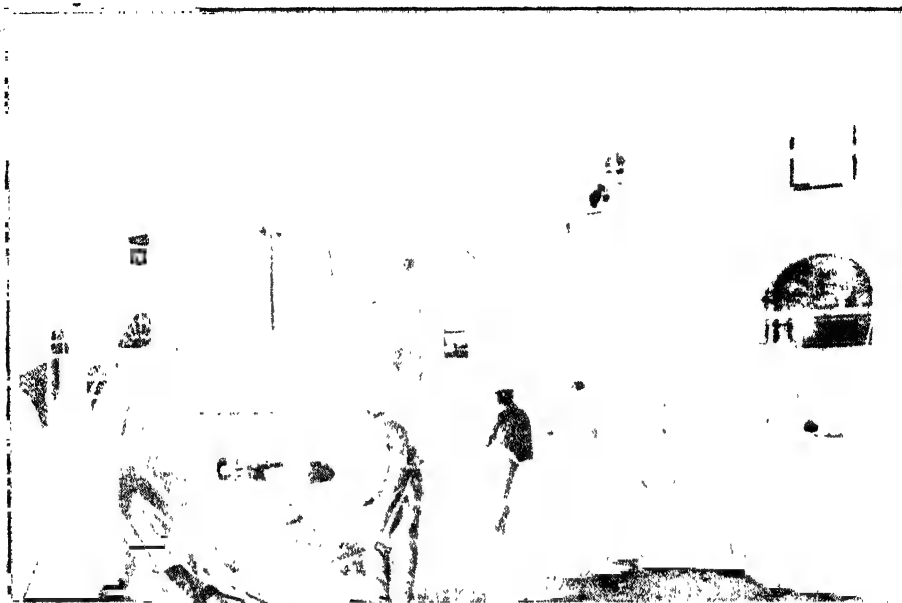
POURING MOLTEN STEEL
INTO INGOT MOLDS

After several hours of melting the liquid steel is poured in an incandescent stream from the crucibles into ingot molds. In these it cools and takes shape, round or square blocks named billets about a yard in length.

The raw material must now be given the preliminary forging to provide the necessary consistency; it is stretched. With thundering blows the steam hammer pounds down upon the steel. This is a giant among machines. Just the drop, the huge weight of the mightiest hammer, weighs 50 cwts. (2½ tons). And now the carefully prepared steel has only the rolling process to undergo before it is ready for actual cutlery manufacture. It carries the essence of quality.

NAWAB SALAR JUNG BAHADUR

Let us take the point of view of industrial organization and management. It is a well known fact that the Solingen cutlery industry carries on its production partly by home industry (piece work done by independent workmen in their homes) and partly in the factory building. The age of this industry far exceeds that of the machine shop and factory and it is evident that in olden times water only supplied the necessary driving power. In those days the Solingen industry with its independent forging and grinding shops nestled down along the banks of the river Wupper and its tributaries. It was a great accomplishment when J. A. Henckels founded a factory and grouped certain phases of the home industry in order to supervise them. The forging and tempering processes in particular, because they are determining factors in the quality of all steel products, are in the case of J. A. Henckels carried on exclusively in the works. And yet the home worker is



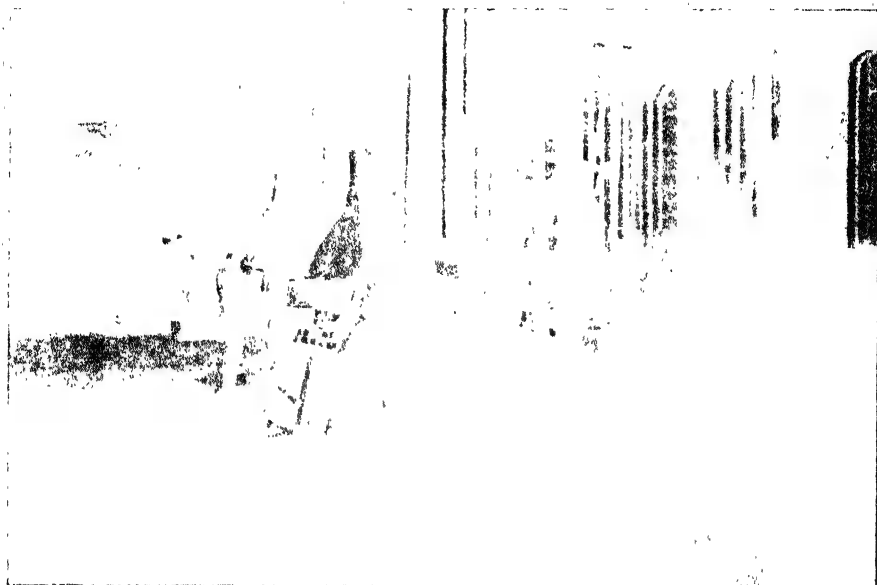
A STEAM HAMMER

not neglected; in fact, even in this age of ever increasing use of machines, certain operations are still performed in the workman's home. The reasons being, above all, that in this way real quality workmanship can be achieved, and that among these workers a certain skill is handed down from generation to generation. Even the most recently constructed buildings were built with consideration for the home worker, whose sociological value in the industry is recognized and whose knowledge and skill must be utilized and preserved even through a change to a more highly mechanical system. In those little shops along the Wupper and in the neighboring valleys the Solingen quality product was first created and there grew the Solingen Steel Tradition, a tradition in the ideal sense of the word. To preserve and make use of this tradition is entirely within the scope of an enterprise whose upper-most principle is the creating of a quality product. Nevertheless, in its various large manufacturing plants Solingen has developed a most modern industrial system which has assimilated the technical achievements of the day and may, as to constructive industrial organization and sanitary conditions, be considered exemplary.

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The steel leaves the rolling mills in long narrow strips and according to composition is distributed in great store rooms to await its turn in the next process. This process, known as splitting, is the first of the typical Solingen processes of manufacture. The various articles are cut from the long strip, but how these can be transformed into paring knives or household scissors is still a mystery.

At this stage an observer will realize for the first time the magnitude of the Twin works and its versatility which, as manufacture proceeds, shows itself in the astonishing number



DROP HAMMERS
IN THE FORGE

of types and patterns, and comes finally to stand as a symbol of the Twin works' exceptional ability to cater to the demands of the individual customer.

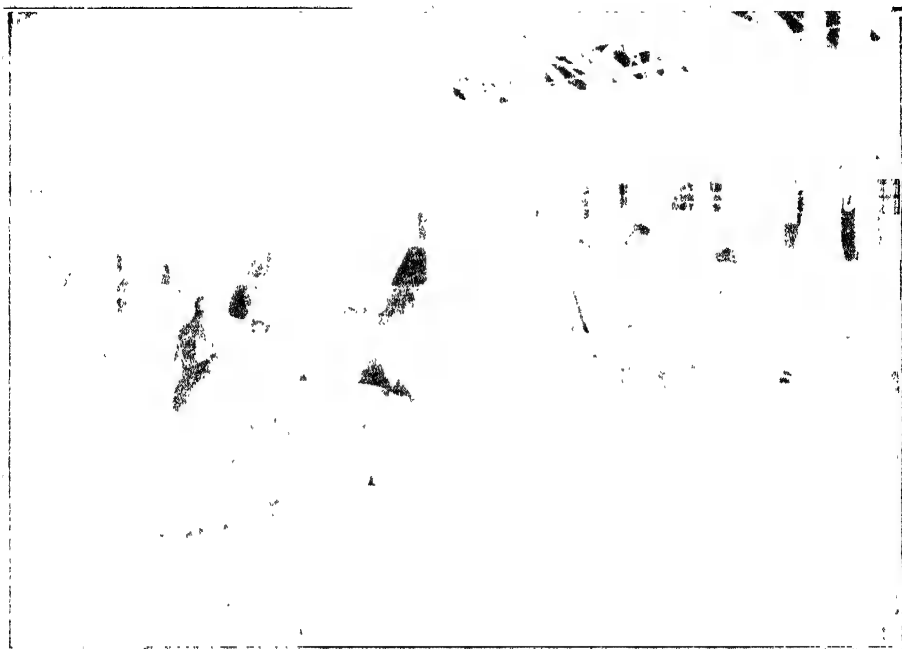
The pieces of split steel are next sent to the forge. Many are the types of hammers used here, two being most important: the drop hammers which forge the red hot steel in dies of a multitude of shapes and the trip hammers, which stretch and flatten knife blades with short quick taps. Let us now look about in this drop forging department. Long driving belts control the heavy drops which at a touch of the lever crash down upon the steel and force it to take the shape of the die. At every hammer stands a forge furnace with its bed of embers and its blue red flames hissing and darting. Sparks scatter in every direction when the drop thunders down with terrific force to leave its emblem on the malleable steel.

In the case of table knives that part technically known as the bolster or balance is thus forged from the split piece of steel. Dessert knives and certain types of long knives are treated similarly. In the case of all other cutlery, however, the die forge marks off in curious relief against a wide grade of bluish metal the exact shapes of the finished articles.

And still, it is obvious, the dull, blunt bit of steel is a long way from being a sharp and shining razor. What user of cutlery stops to think of the complexities of its production, of the numbers of skilled hands that helped to make a pocket knife, of the amount of scrutinizing required to pronounce a nail nipper worthy to bear the Twin ~~XX~~ Brand? Even so simple a utility as a paring knife must in various parts of the works undergo some sixteen distinct operations.

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From the drop forge the various articles go their separate ways. Table knives and the long knives mentioned above go



TRIP HAMMERS IN ACTION
STRETCHING KNIFE BLADES

to a work hall which resounds with the deafening noise of the fast falling blows of the trip hammer. This department is probably the one that leaves the deepest impression on a visitor of the Twin works, for here is the continual pounding and lashing of hammers. The very earth trembles with the beat of the mad chasing tempo of the song of industry. Every hammer strikes four hundred times per minute and in one day one workman feeds to one insatiable hammer 1600 table knives or 2500 kitchen or paring knives.

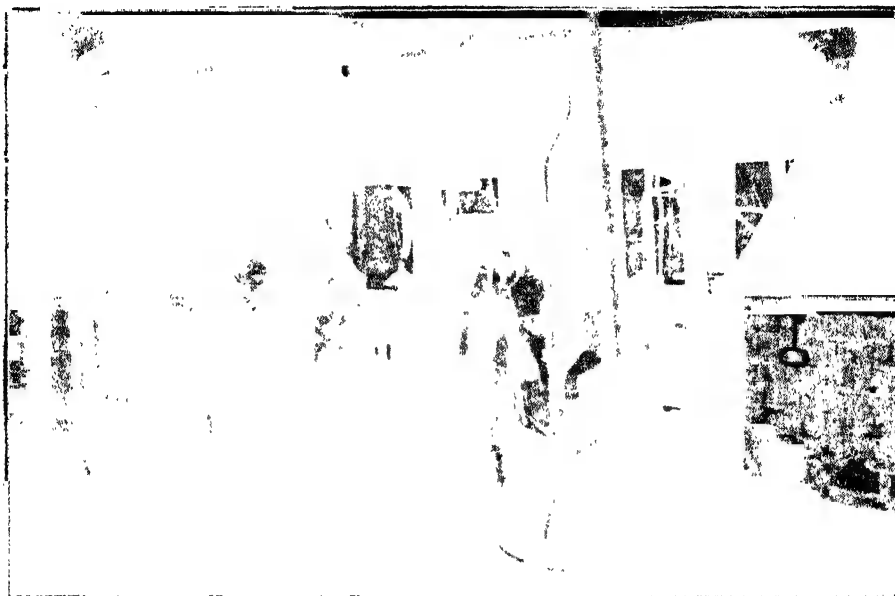
Despite this enormous expenditure of power the process is comparatively simple. On leaving the drop forge the steel of a future table knife is still essentially a piece of split steel. Under the continual beat of the hammers it flattens out, becomes longer and thinner, and gradually assumes the outlines of a knife.

Other types of cutlery fare better for they do not suffer the tortures of the trip hammers. Once they are forged a power press cuts off all superfluous material in one operation.


Table knives and long knives present an additional problem. The part below the bolster must be made into a tang which serves to hold the handle. A strange, weirdly skillful machine grasps the bit of steel and beats it rapidly with four hammers until, as if by magic, the workman draws out the elongated piece, a finished tang.

Thus is the shaping process ended. The fate of each piece of cutlery is irrevocably sealed.

The steel has had much to endure in its release from the crude state and its gradual transformation into a usable article. Time and again it went through the fire. Again and again it was subjected to cruel hammering. And now, before it reaches its maturity and is considered deserving of a cutting edge, it must be hardened. Like Tamino and Papageno in Mozart's







THE HARDENING PROCESS

"Zauber-Floete", only when it has overcome countless dangers and horrors, will it be worthy to enter the exalted estate of a piece of Twin  Brand cutlery.

The hardening process is an important link in cutlery production for it determines to no small degree the possibility of a permanent cutting edge.

In the hardening shop the visitor is surrounded by a weird dimness, a peculiar light best adapted to judging whether the steel in the furnaces has attained the proper degree of heat for hardening. Once this temperature has been reached the article is immersed in great vats of oil or of water (according to the composition of the steel itself and the purpose for which the finished product is destined). Though these two operations are the essentials of the hardening process one important event comes between.

This is the hour of birth of the Twin  Brand. The glare of the forge fires reveals a man sitting high up, literally astride a drop hammer, allowing it to descend upon each blade as one of the four workmen with long tongs holds it in position. Thus are the name of the firm and the Twin  Brand stamped into the glowing metal. Table knives in particular are stamped with a Twin  Brand in this way. For technical reasons on other pieces of cutlery the trade mark is etched. Some may consider this method of stamping a bit antiquated. But first of all, the result has proved to be clear and perfectly adapted, and secondly, the method stands as a proud symbol. Nursing the quality concept is as traditional in the Twin works as the time tried method of stamping the Twin  Brand.

The precise degree of hardness is attained through a succeeding tempering process; careful reheating eliminates any excessive hardness or brittleness caused in the hardening.



A GRINDING SHOP

This ends the preparation of the material as well as the biggest part of the shaping. The final shaping of cutlery is done by grinding. The pounding of hammers has ceased. Instead there is the buzzing and whirring of huge grind stones, each encased like a knight of old in heavy armor to protect the worker against flying pieces should any breakage occur. Sitting on peculiar stools in a position which enables them to exert great pressure with their knees the grinders hold the surface of the blade against the grindstone, which has a velocity at the circumference of 720 meters per minute (2400 feet). This is work typical of Solingen. These are real Solingen workmen who are proud of their skill and accomplishments. Not infrequently their fine strong voices such as are often found in the „Bergisches Land“, (that part of the Rhine Province in which Solingen is situated) join in a song that rises above the buzzing of the huge grindstones.

Preliminary grinding leaves the knife rough hewn and graceless, like a child of the wilderness reared distant from civilization. It has no refinement, no smooth surface; it must be glazed or polished.

This is done on leather covered wheels with jeweler's red, emery, or lime, to give the steel its desired finish.

Thus are ended the metal working phases of the manufacture. Carefully thought out they are and their workability is founded on the tradition of centuries that cannot at will and short notice be transplanted. Herein lies the reason why Solingen industry is so deep rooted and has remained where it originated. Competition has sprung up under stress of economic circumstances but to this day whoever seeks a fine piece of cutlery, wherever he may be, chooses the Solingen product,



GLAZING AND POLISHING

and smiles knowingly in satisfaction whenever he discovers the well known Twin  Brand on the blade.



Next the blades go to the finisher. The two parts of the scissors are put together, table knives and razors are mounted in their handles, pocket knives are assembled. These processes like all the others, require a highly schooled force of workmen which, through means of far reaching specialization, has developed particular skill in this particular operation. In almost no other industry is the division of labor as extensive as in Solingen, and the fact that especially trained workers are employed for each phase of the work is one of the many reasons for the supreme quality of the product. The Twin works in particular, employs a capable body of workers that has gathered valuable experience through long years of service in the works.

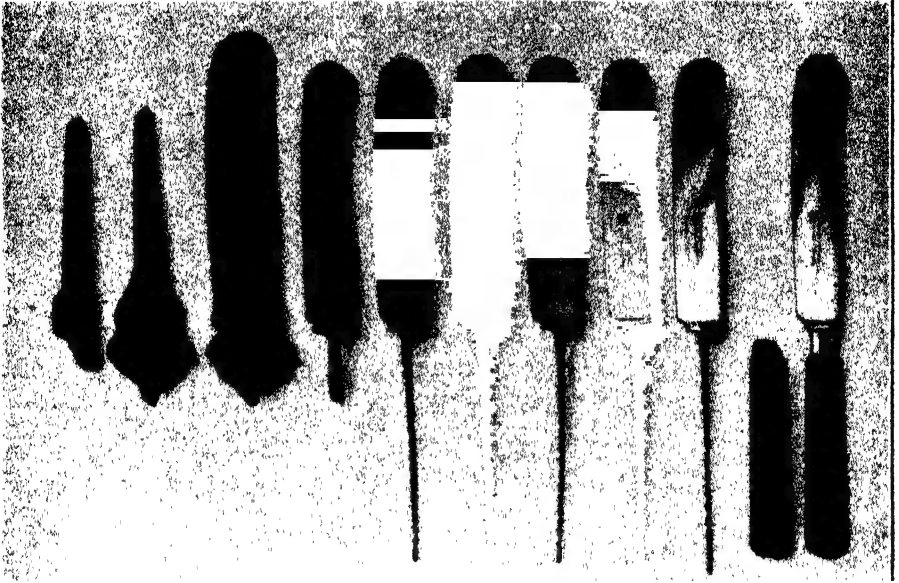
NAWAB SALAR JUNG BAHADUR

The Twin works has always aimed to unite under its supervision all branches of its production, to render itself wholly independent, and to manufacture its cutlery from its very beginning. It is therefore not surprising to find a large division which handles only the wood working end. Logs bought up in the forest by employees of the firm are cut up and treated in a Twin works mill equipped with the most modern automatic fraizing machinery.

Here the handles for paring and bread knives, mainly, and for certain types of table cutlery, are made.

Finishers or assemblers combine wood and steel. The piece of cutlery is completed. A long road indeed lies behind the gleaming blade or the slender pair of scissors that was a crude bit of steel.


Are you familiar with the Twin  Brand razor blades in their colorful wrapping which bears the Twin  Brand in a sunburst?



EVOLUTION
OF A TABLE KNIFE

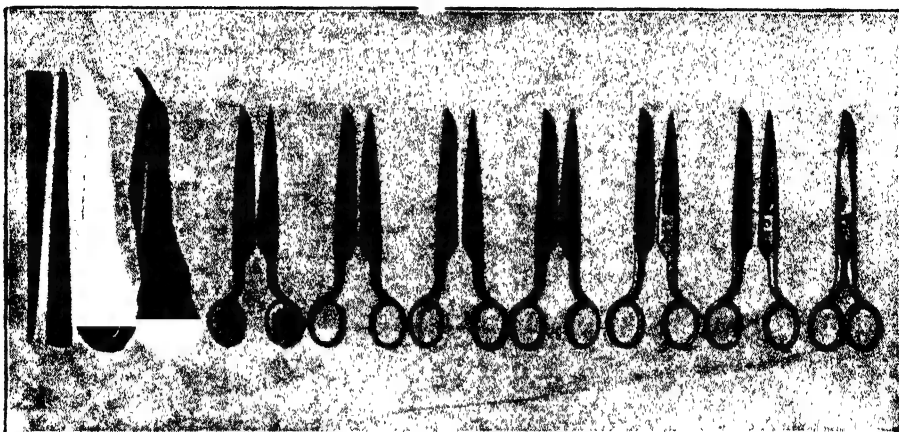
Seen in contrast to the age of knives and scissors we have in the razor blade a mere infant, the youngest child of the Twin works. But the razor blade division has already been expanded considerably and has assured itself of an important and respected place in the program of manufacture.

The last word in machines of own construction, painstakingly supervised production, and carefully selected steel are the secrets of this latest triumph, which is the more remarkable because it has made itself felt even in countries where other products had gained a foothold.

Throughout all phases of manufacture, the product was closely scrutinized. It was subjected to frequent tests that followed immediately upon the various hand and machine processes. Last of all, there is a final control, the inspection of the finished article. In light and spacious halls experienced men handle each individual piece, every pair of scissors, every razor, every fork and table knife, and examine it carefully from all sides. Only if it has not the slightest flaw may it carry the Twin  Brand out into the world.

This inspection is a tedious task. Scissors are immersed in lime to show up even the slightest blemish. The sharpness of a razor is tested on a woman's hair, preferably a blonde hair, which is admittedly softer and therefore more difficult to cut than a black hair. Table knives are slid over a metal contrivance and are flexed several times to make sure of the elasticity of the blade.

In this department dwells the conscience of the Twin works; concentrated here are the consciousness and the joy of responsibility.

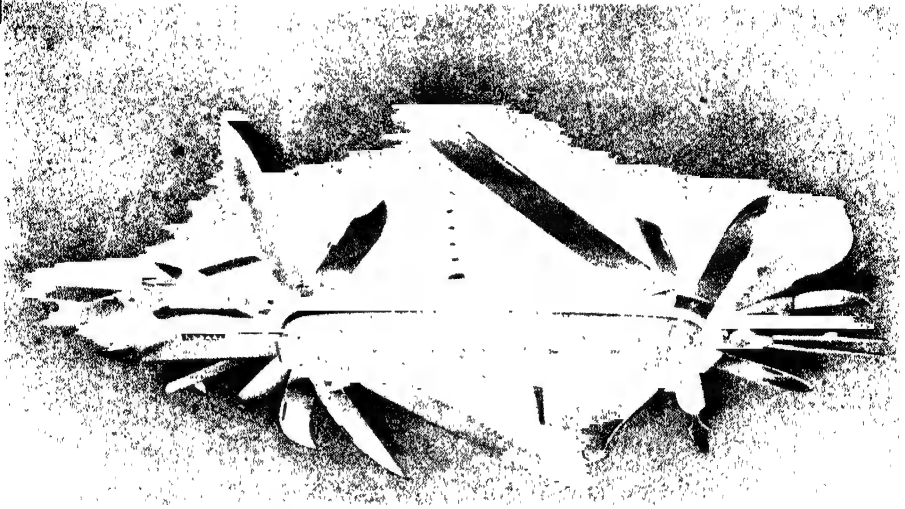


EVOLUTION
OF A PAIR OF SCISSORS

A few figures will show the size and importance of the Twin works; 2500 laborers, to a considerable extent home workers, are employed.


The factories cover 26 acres of ground.

The Twin works power plant develops 1800 horse power. It stands to reason that such great resources in space, machine, and manpower make for an immense output. A glance at the catalogue will reveal an amazing multiplicity and an unsurpassed power to conform to the customs and wishes of the various countries and classes. Every land has its peculiar tastes as to cutlery; for instance, in England table knives with white handles are preferred, while in Germany ebony has the greatest appeal. There are dainty little dessert sets for milady's tea table, there are heavy stag handled ones for the huntsman's breakfast. Simple nickel plated handles are adapted to the needs of the less moneyed classes, silver sets conform to the tastes of the most critical. Bread knives may be had in a variety of shapes, some have shaped handles, some have curved blades, and some waveline edges. And consider the specialty knives of which we list only a few. The interesting catalogue includes: Book Binders Knives, Electrician's Knives, Cigar Maker's Knives, Fish Knives, Feather Curling Knives, Meat Testing Knives, Glazier's Knives, Cleavers, Chicken Splitters, Wood Carving Knives, Cook's Knives, Saddler's Knives, Butcher's Knives, Shoemaker's Knives, Spatulas, and Grape Picking Knives. Though this list is incomplete it shows the magnitude of assortment, especially when it is remembered that each type can be had in a number of variations. The variety in scissors, pocket knives and razors is enormous. It must be remembered, too, that cutlery is a line which is largely subject to fads. What delights the masses today, fashion will burn at the stake tomorrow. Cutlery production,




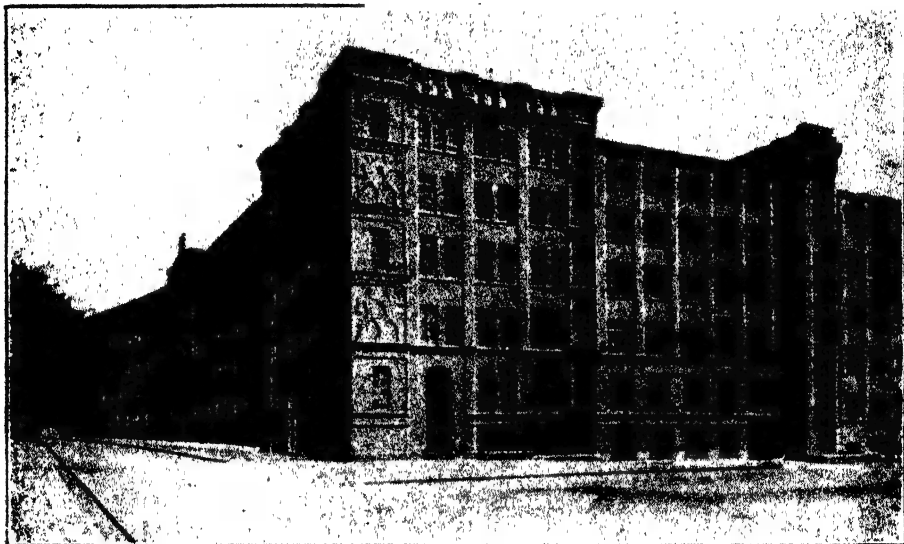
**MULTI-BLADED POCKET KNIFE
USED AS EXHIBITION PIECE**

therefore, must be flexible and elastic, and with one ear to the ground for danger signals, must recognize them in time and prepare for them. Not only caprice, which today for instance, prefers the thin light pocket knife to the many bladed one of former days, but other possibilities threaten the permanence of a given pattern. Up to the time of prohibition in the United States pocket knives with cork screws were popular and now, of course, there is a demand only for the knife "without a cork screw". Similar conditions occur to a greater or a less degree in all lines; as an instance we mention only manicure sets, which must gracefully adapt themselves to the whim of the day.


The technical equipment of the Twin works and the power to press the entire organization with its valuable resources into the service of the mode keep the Twin  Brand product up to date.

The Twin works owns branch houses in Berlin, Dresden, Frankfort o. M., Hamburg, Cologne, Munich, Vienna, Paris, and New York. These establish reliable connections with the consumer and permit all his wishes, suggestions, criticisms, and complaints to reach the proper authority.

It is fascinating to look into a show window of a J. A. Henckels retail establishment as it exists in the cities mentioned. These show windows, being fitted out exclusively with Twin  Brand cutlery, are ablaze with the splendor of innumerable glittering knives and scissors. The light twinkles and sparkles through the show rooms. It is easy to forget how slowly the goods came through dark shafts, smokey forges, and tempering departments filled with oil fumes, out into the sunlight. Within a small space may be seen an assortment that stands as the acme of the Solingen Cutlery Industry. Sometimes the central feature of a show window is some artistic oversized exhibition



ADMINISTRATION BUILDINGS
OF THE TWIN WORKS

piece that bears witness to the name and the craftsmanship attained in the Twin works. Scissors and razors in a galaxy of colors, multi-bladed pocket knives with scales of precious metal artistically chiselled and engraved or etched proudly display the Twin  Brand to be greeted by all who see it, as a good and faithful friend.

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At an early date the Twin works realized the advertising value of expositions. Its appearance was a chain of successes, for thus the superiority of its product found public appreciation. As early as 1844 the Twin works was awarded the silver medal at the Berlin Industrial Exhibition and the Leipzig Industrial Exposition made the same award in 1850. At its first participation in a World's Fair the Twin works won the prize medal in London in 1851, another in the New York World's Fair of 1853 and a Paris World's Fair in 1855 awarded the Twin works its highest distinction, the Medaille d'Honneur. In the next succeeding years the following medals went to the Twin works:

1873 Bronze Medal of Progress, Vienna World's Fair

1880 State of Prussia Silver Medal for Industrial Achievement, Dusseldorf Industrial Exhibition.

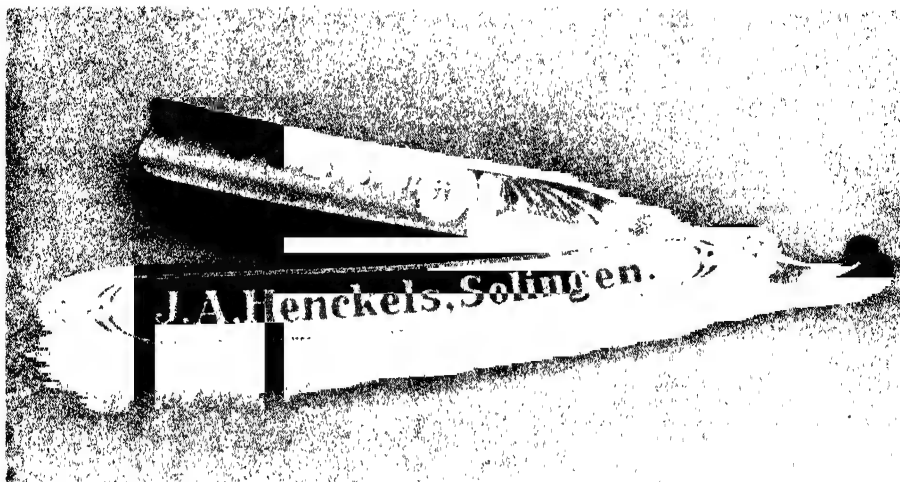
1880 Silver Medal, Melbourne World's Fair

1885 Gold Medal, World's Fair, Antwerp.

The only medal of the Chicago World's Fair of 1893 went to the Twin works. Gold medals were carried off from the expositions, in Berlin 1896, Hamburg 1897, and Frankfort 1900. Another, still greater triumph was won in 1900 when the Grand Prix, the highest award of the Paris World's Fair went to the Twin works. After that distinction followed on distinction:

1902 Gold Medal, Dusseldorf Industrial Exhibit

1904 Grand Prize (highest award) St. Louis World's Fair





A VALUABLE EXHIBITION PIECE

- 1905 Gold Medal, Frankfort International Culinary Art Exposition
- 1906 Gold Medal and Medal of Commemoration of the III. German Exposition of Industrial Art, Dresden.
- 1909 State of Saxony Medal and Gold Medal, Dresden Culinary Art Exposition.
Gold Medal, Berlin Culinary Art Exposition
Gold Medal and Medal of Honor in the Society for Promotion of Home Industry in Lower Austria.
- 1912 Holder of Award of Honor, Society for Promotion of Home Industry in Lower Austria.
- 1915 Grand Prize for Cutlery, Grand Prize for Industrial Art, Gold Medal, and Medal of Honor for Gardener's Tools, World's Fair San Francisco.
- 1925 Grand Prize Frankfort International Culinary Art Exposition.

Verily, a creditable array of distinctions that bespeaks the consumer's appreciation. ~~WAB~~ SALAR JUNG BAHADUR.




It was a stroke of genius that led Johann Peter Henckels to register the Twin  Brand in the Scroll of Solingen Knifemakers' Trademarks. In former days a trademark was stamped in cutlery only when the Guild Inspection had established its impeccable quality. They knew the deserts of the name Solingen, and were anxious to maintain it as the unconditional guarantee of the first rate quality of its cutlery. After the decline of the Guild not all trademarks held to this tradition as did the Twin  Brand, which to this day stands as the symbol of undisputed quality.



The Trademark's greatest value lies in its originality. To join two little figures, stamp them on knives, and christen them "The Twin" Brand is a curious and amusing idea as well as a bold linguistic creation. There is something attractively modern as well as unique about this symbol and because it is so clear and so easily understood it impresses itself unforgetably on one's mind.

Its strong outstanding lines are interesting because of the contrasting positions of the arms, and still rhythmic because of the symmetry of the bodies. Trade papers have frequently admitted that this trademark is, if not the best, then at least one of the best, in existence.

Obviously, so excellent and valuable a trademark must be strongly protected. A number of similar marks and variations in the composition are also copyrighted by the Twin works. There have been many attempts at infringement, always frustrated. Infringements, if discovered along the lawful paths of Trademark Registration in the Federal Patent Office, have been fought openly and with due consideration, but the Twin works has used every resource at its command to over-throw unfair competition and backstairs attempts to deprive the rightful owners of their century old rights.

Somewhere along the Congo an explorer in grateful memory called a mountainous district "Twin Mountains". Pieces of writing with only the trademark as title have occasionally drifted to Solingen. In political satire the symbol is frequently parodied to characterize forced coalitions. Japanese laborers in the vineyards of California demand as their tool a grape picking knife with the mark of the "Two Men".

The Twin  Brand has conquered the world. It rules with the supremacy of a King. No one doubts it. It is a certain guarantee of the finest cutlery. It speaks a language understood the world over. The symbol has, in the best and finest sense of the phrase, come to be every man's heritage.

The Twin  Brand as symbol of the Twin works and its product also decorates the massive new structures which the Twin works erected in recent years of economic depression. Spacious are its well lighted halls, severe and simple. Symbolizing diligence and creative power stand its reddish walls of fire brick and in relief the Twin  Brand protrudes sharply from the bulwarks of its masonry, a monument to its purpose.

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Thus concludes the study of the works, its product, and its trademark; these parts melt into one mighty unit and carry their fame through the world.

PRINTED BY HERMANN RABITZ, SOLINGEN

